June 21, 2001

Mr. Bryan Vianco
Manufacturing Engineer
Woods Equipment Company
P.O. Box 603
Brownsburg, IN 46112

Re: To Registration 063-10521-00040,
Notice Only Change, 063-14089-00040

Dear Mr. Vianco:

The application from Woods Equipment Company, received on March 12, 2001, has been reviewed. Based on the data submitted and the provisions in 326 IAC 2-5.5, it has been determined that the following manufacturing plant for heavy construction equipment attachments, located at 802 East Main Street, Brownsburg, Indiana, is classified as still registered:

(a) One (1) paint booth equipped with one (1) siphon-fed spray gun for primer and three (3) siphon-fed spray guns for topcoat, capable of painting heavy construction equipment attachments at a maximum rate of one hundred (100) units per day, each with a surface area of seven (7) square feet per unit, using dry filters to control particulate matter emissions.

(b) Natural gas combustion sources totaling seven and one half (7.5) MMBtu per hour, consisting of the following:

(1) Emersion tube water heater with a maximum capacity of 2.5 MMBtu/hour.

(2) Cure oven (507-20TNM1-2) with a maximum capacity of 0.8 MMBtu/hour.

(3) Cure oven (507-20TMM1-1) with a maximum capacity of 0.8 MMBtu/hour.

(4) Drying oven (507-20TMM2) with a maximum capacity of 0.8 MMBtu/hour.

(5) Dry/cure oven (76-500) with a maximum capacity of 0.35 MMBtu/hour.

(6) Eighteen (18) space heaters and two (2) water heaters with a maximum combined capacity of 2.248 MMBtu/hour.

(c) One (1) plasma cutting station, equipped with three (3) cutting heads, with a maximum metal thickness cut of 1 inch at a maximum metal cutting rate of 20 inches per minute and a typical metal thickness of 0.5 inches at a cutting rate of 80 inches per minute.

(d) One (1) recirculating air powder booth using no volatile organic compounds (VOCs), capable of coating one hundred (100) units per day at seven (7) square feet per unit, with a powder coat usage of sixty-four (64) square feet per pound of powder at a transfer efficiency of 40%.

(e) Two (2) plasma cutting stations each equipped with one cutting head, with a maximum metal thickness cut of 1 inch at a maximum metal cutting rate of 20 inches per minute and a typical metal thickness of 0.5 inches at a cutting rate of 80 inches per minute.

(f) Twenty-four (24) metal inert gas (MIG) welders with a maximum electrode consumption per station of 1.5 lbs/hour.

The following conditions shall be applicable:

1. Pursuant to 326 IAC 5-1-2 (Opacity Limitations) except as provided in 326 IAC 5-1-3 (Temporary Alternative Opacity Limitations), opacity shall meet the following:

   (a) Opacity shall not exceed an average of forty percent (40%) in any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4.

   (b) Opacity shall not exceed sixty percent (60%) for more than a cumulative total of 15 minutes (60 readings) in a 6-hour period as measured according to 40 CFR 60, Appendix A, Method 9 or fifteen (15) one (1) minute nonoverlapping integrated averages for a continuos opacity monitor in a six (6) hour period.

2. Pursuant to 326 IAC 6-3-2 (Process Operations), the particulate matter (PM) from the spray booth, powder coating booth, welding stations, and plasma cutting units shall be limited by the following:

   Interpolation of the data for the process weight rate up to sixty thousand (60,000) pounds per hour shall be accomplished by use of the equation:

   $E = 4.10\ P^{0.67}$ where E = rate of emission in pounds per hour and P = process weight rate in tons per hour

   The dry filters shall be in operation at all times the spray booth is in operation, in order to comply with this limit.

3. Pursuant to 326 IAC 8-2-9 (Miscellaneous Metal Coating Operations), the volatile organic compound (VOC) content of coating delivered to the applicator at the spray booth shall be limited to 3.5 pounds of VOCs per gallon of coating less water, for dried coatings.

   Solvent sprayed from application equipment during cleanup or color changes shall be directed into containers. Such containers shall be closed as soon as such solvent spraying is complete, and the waste solvent shall be disposed of in such a manner that evaporation is minimized.

   To document compliance with this limit, the Permittee shall maintain records of the VOC content of each coating material used. Records shall include purchase orders, invoices, and material safety data sheets (MSDS) necessary to verify the type of coating used.

This notice only change to Registration 063-14089-00040 is issued to this source. The source may operate according to 326 IAC 2-5.5.

An authorized individual shall provide an annual notice to the Office of Air Quality that the source is in operation and in compliance with this registration pursuant to 326 IAC 2-5.1-2(f)(3). The annual notice shall be submitted to:

Compliance Data Section
Office of Air Management
100 North Senate Avenue
P.O. Box 6015
Indianapolis, IN 46206-6015

no later than March 1 of each year, with the annual notice being submitted in the format attached.

An application or notification shall be submitted in accordance with 326 IAC 2 to the Office of Air Quality (OAQ) if the source proposes to construct new emission units, modify existing emission units, or otherwise modify the source.

Sincerely,

Original signed by Paul Dubenetzky

Paul Dubenetzky, Chief
Permits Branch
Office of Air Management

ERG/AB

cc: File - Hendricks County
Air Compliance - Marc Goldman
Permit Tracking - Janet Mobley
Technical Support and Modeling - Michele Boner
Compliance Data Section - Karen Nowak

Registration

This form should be used to comply with the notification requirements under 326 IAC 2-5.5-4(a)(3).

Company Name:	Woods Equipment Company
Address:	P.O. Box 603
City:	Brownsburg, Indiana
Authorized individual:	Bryan Vianco
Phone #:	(317) 852-8622
Registration #:	063-14089-00040

I hereby certify that McGill manufacturing is still in operation and is in compliance with the requirements of Registration 063-14089-00040.

Name (typed):	
Title:	
Signature:	
Date:	

Indiana Department of Environmental Management
Office of Air Quality

Technical Support Document (TSD) for a Registration

Source Background and Description

Source Name: Woods Equipment Company
Source Location: 802 East Main Street, Brownsburg, Indiana 46112
County: Hendricks
SIC Code: 3531
Operation Permit No.: 063-14089-00040
Permit Reviewer: ERG/AB

The Office of Air Quality (OAQ) has reviewed an application from Wood Equipment Company relating to the construction and operation of a manufacturing plant for heavy construction equipment attachments.

Permitted Emission Units and Pollution Control Equipment

The source consists of the following permitted emission units and pollution control devices:

(a) One (1) paint booth equipped with one (1) siphon-fed spray gun for primer and three (3) siphon-fed spray guns for topcoat, capable of painting heavy construction equipment attachments at a maximum rate of one hundred (100) units per day, each with a surface area of seven (7) square feet per unit, using dry filters to control particulate matter emissions.

(b) Natural gas combustion sources totaling seven and one half (7.5) MMBtu per hour, consisting of the following:

(1) Emersion tube water heater with a maximum capacity of 2.5 MMBtu/hour.

(2) Cure oven (507-20TNM1-2) with a maximum capacity of 0.8 MMBtu/hour.

(3) Cure oven (507-20TMM1-1) with a maximum capacity of 0.8 MMBtu/hour.

(4) Drying oven (507-20TMM2) with a maximum capacity of 0.8 MMBtu/hour.

(5) Dry/cure oven (76-500) with a maximum capacity of 0.35 MMBtu/hour.

(6) Eighteen (18) space heaters and two (2) water heaters with a maximum combined capacity of 2.248 MMBtu/hour.

(c) One (1) plasma cutting station, equipped with three (3) cutting heads, with a maximum metal thickness cut of 1 inch at a maximum metal cutting rate of 20 inches per minute and

a typical metal thickness of 0.5 inches at a cutting rate of 80 inches per minute.

(d) One (1) recirculating air powder booth using no volatile organic compounds (VOCs), capable of coating one hundred (100) units per day at seven (7) square feet per unit, with a powder coat usage of sixty-four (64) square feet per pound of powder at a transfer efficiency of 40%.

(e) Twelve (12) metal inert gas (MIG) welders with a maximum electrode consumption per station of 1.5 lbs/hour.*

*Not included in previous permits, but emissions are below the exemption thresholds provided in 326 IAC 2-1.1-3.

Unpermitted Emission Units and Pollution Control Equipment

There are no unpermitted facilities operating at this source during this review process.

New Emission Units and Pollution Control Equipment Receiving Prior Approval

(a) Two (2) plasma cutting stations each equipped with one cutting head, with a maximum metal thickness cut of 1 inch at a maximum metal cutting rate of 20 inches per minute and a typical metal thickness of 0.5 inches at a cutting rate of 80 inches per minute.

(b) Twelve (12) metal inert gas (MIG) welders with a maximum electrode consumption per station of 1.5 lbs/hour.

Existing Approvals

The source has been operating under previous approvals including, but not limited to, the following:

(a) Registration 063-7193-00040, issued on January 30, 1997;

(b) Registration 063-10521-00040, issued on June 10, 1999;

(c) Notice-only change 063-11091-00040 to R063-10521-00040, issued on July 26, 1999; and

(d) Notice-only change 063-11308-00040 to R063-10521-00040, issued on September 28, 1999.

All conditions from previous approvals were incorporated into this permit.

Enforcement Issue

There are no enforcement actions pending.

Stack Summary

Stack ID	Operation	Height (feet)	Diameter (feet)	Flow Rate (acfm)	Temperature (^{0}F)
S-1	Powder coating booth	24.0	2.8	10,000	Ambient
S-2	Spray paint booth	31.5	2.8	11,942	Ambient

Recommendation

The staff recommends to the Commissioner that the construction and operation be approved. This recommendation is based on the following facts and conditions:

Unless otherwise stated, information used in this review was derived from the application and additional information submitted by the applicant.
An application for the purposes of this review was received on March 12, 2001, with additional information received on March 28, 2001.

Emission Calculations

See Appendix A of this document for detailed emissions calculations (Appendix A, pages 1 through 6.

Potential To Emit of Source Before Controls

Pursuant to 326 IAC 2-1.1-1(16), Potential to Emit is defined as "the maximum capacity of a stationary source or emissions unit to emit any air pollutant under its physical and operational design. Any physical or operational limitation on the capacity of a source to emit an air pollutant, including air pollution control equipment and restrictions on hours of operation or type or amount of material combusted, stored, or processed shall be treated as part of its design if the limitation is enforceable by the U. S. EPA, the department, or the appropriate local air pollution control agency."

Pollutant	Potential To Emit (tons/year)
PM	24.09
PM-10	24.09
SO_2	0.02
VOC	16.43
CO	2.76
NO_x	3.29

HAP's	Potential To Emit (tons/year)
Ethyl Benzene	0.56
Xylenes	2.8
Toluene	0.91
Manganese	0.006
Chromium	0.002
TOTAL	4.3

(a) The potential to emit (as defined in 326 IAC 2-7-1(29)) all criteria pollutants are less than 100 tons per year. Therefore, the source is not subject to the provisions of 326 IAC 2-7.

(b) The potential to emit (as defined in 326 IAC 2-7-1(29)) all criteria pollutants are less than 25 tons per year. Therefore, the source is not subject to the provisions of 326 IAC 2-6.1.

(c) The potential to emit (as defined in 326 IAC 2-7-1(29)) PM, PM-10 and VOC pollutants are greater than levels listed in 326 IAC 2-1.1-3(d)(1), therefore the source is subject to the provisions of 326 IAC 2-5.5.1.

(e) The potential to emit (as defined in 326 IAC 2-7-1(29)) any single HAP is less than ten (10) tons per year and the potential to emit (as defined in 326 IAC 2-7-1(29)) of a combination of HAPs is less than twenty-five (25) tons per year. Therefore, the source is not subject to the provisions of 326 IAC 2-7.

(f) After the addition of the two (2) plasma cutting stations and twelve (12) metal inert gas (MIG) welding stations, the source still has registration status.

(g) This registration applies to the entire source and serves as a renewal of the source's current operating permit.

Potential to Emit of Revision Before Controls

The potential to emit before controls for the proposed revision are provided below:

	Potential to Emit (tons/year)						
Process	PM	PM-10	SO_2	VOC	CO	NOx	HAPs
Two (2) Plasma Cutting Stations	0.162	0.162	0	0	0	0	0
Twelve (12) MIG Welding Stations	1.9	1.9	0	0	0	0	Negligible
Totals	2.06	2.06	0	0	0	0	Negligible

Justification for Modification

This notice-only-change to the source's registration is being performed pursuant to 326 IAC 2-5.5-6(d)(12).

County Attainment Status

The source is located in Hendricks County.

Pollutant	Status
PM-10	Attainment
SO_2	Attainment
NO_2	Attainment
Ozone	Attainment
CO	Attainment
Lead	Attainment

(a) Volatile organic compounds (VOC) and oxides of nitrogen (NOx) are precursors for the formation of ozone. Therefore, VOC emissions are considered when evaluating the rule applicability relating to the ozone standards. Hendricks County has been designated as attainment or unclassifiable for ozone. Therefore, VOC and NOx emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2 and 40 CFR 52.21.

(b) Hendricks County has been classified as attainment or unclassifiable for all other criteria pollutants. Therefore, these emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2 and 40 CFR 52.21.

Source Status

New Source PSD, Part 70 or FESOP Definition (emissions after controls, based on 8,760 hours of operation per year at rated capacity and/ or as otherwise limited):

Pollutant	Emissions (ton/yr)
PM	22.13
PM10	22.13
SO_2	0.02
VOC	16.15
CO	2.8
NO_x	3.3

(a) This existing source is not a major stationary source because no attainment regulated pollutant is emitted at a rate of 250 tons per year or more, and it is not in one of the 28 listed source categories.

(b) These emissions were based on calculations provided in the permit application and the Technical Support Document for permit number 063-10521-00040, issued on June 10, 1999.

Part 70 Permit Determination

326 IAC 2-7 (Part 70 Permit Program)

This existing source, including the emissions from this permit CP-063-14089-00040, is not subject to the Part 70 Permit requirements because the potential to emit (PTE) of:

(a) each criteria pollutant is less than 100 tons per year,
(b) a single hazardous air pollutant (HAP) is less than 10 tons per year, and
(c) any combination of HAPs is less than 25 tons/year.

This status is based on all the air approvals issued to the source.

Federal Rule Applicability

(a) There are no New Source Performance Standards (NSPS)(326 IAC 12 and 40 CFR Part 60) applicable to this source.

(b) There are no National Emission Standards for Hazardous Air Pollutants (NESHAPs)(326 IAC 14 and 40 CFR Part 63) applicable to this source.

State Rule Applicability - Entire Source

326 IAC 2-6 (Emission Reporting)

This source is located in Hendricks County and the potential to emit CO, VOC, NO_x, PM-10 and SO_2 is less than one hundred (100) tons per year. Therefore, 326 IAC 2-6 does not apply.

326 IAC 5-1 (Visible Emissions Limitations)

Pursuant to 326 IAC 5-1-2 (Opacity Limitations), except as provided in 326 IAC 5-1-3 (Temporary Alternative Opacity Limitations), opacity shall meet the following, unless otherwise stated in this permit:

(a) Opacity shall not exceed an average of forty percent (40%) any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4.

(b) Opacity shall not exceed sixty percent (60%) for more than a cumulative total of fifteen (15) minutes (sixty (60) readings) as measured according to 40 CFR 60, Appendix A, Method 9 or fifteen (15) one (1) minute nonoverlapping integrated averages for a continuous opacity monitor) in a six (6) hour period.

State Rule Applicability - Individual Facilities

326 IAC 2-4.1 (Major Sources of Hazardous Air Pollutants (HAP))

The operation of this source will emit less than 10 tons per year of a single HAP or 25 tons per year of a combination of HAPs. Therefore, 326 IAC 2-4.1 does not apply.

326 IAC 8-1-6 (New Facilities - General Reduction Requirement)

This source does not have potential VOC emissions equal to or greater than twenty five (25) tons per year, and the source is subject to 326 IAC 8-2-9, therefore this source is not subject to the provisions of 326 IAC 8-1-6.

326 IAC 6-3-2 (Process Operations)

The particulate matter (PM) from the spray booth, powder coating operation, welding stations, and plasma cutting operations shall be limited by the following:

Interpolation of the data for the process weight rate up to sixty thousand (60,000) pounds per hour shall be accomplished by use of the equation:

$E = 4.10 P^{0.67}$ where E = rate of emission in pounds per hour and
P = process weight rate in tons per hour

The dry filters shall be in operation at all times the spray paint booth is in operation, in order to comply with this limit.

326 IAC 8-2-9 (Miscellaneous Metal Coating)

Pursuant to 326 IAC 8-2-9 (Miscellaneous Metal Coating Operations), the volatile organic compound (VOC) content of coating delivered to the applicator at the spray booth shall be limited to 3.5 pounds of VOCs per gallon of coating less water, for air dried coatings.

Solvent sprayed from application equipment during cleanup or color changes shall be directed into containers. Such containers shall be closed as soon as such solvent spraying is complete, and the waste solvent shall be disposed of in such a manner that evaporation is minimized.

Based on the MSDS submitted by the source and calculations made, the spray booth is in compliance with this requirement.

Compliance Monitoring

The source is not required to perform operating procedures for the dry filters, because the emissions do not exceed 10 lbs per hour.

Conclusion

The construction and operation of this manufacturing plant for heavy construction equipment attachments shall be subject to the conditions of the attached proposed Registration 063-14089-00040.

Appendix A: Emissions Calculations
Natural Gas Combustion Only
MM BTU/HR <100
Small Industrial Boiler

Company Name: **Woods Equipment Company**
Address City IN Zip: **Brownsburg, IN 46112**
CP: **063-14089-00040**
Plt ID: **00040**
Reviewer: ERG/AB
Date: 03/30/01

Heat Input Capacity MMBtu/hr	Potential Throughput MMCF/yr
7.5	65.7

	Pollutant					
	PM*	PM10*	SO2	NOx	VOC	CO
Emission Factor in lb/MMCF	7.6	7.6	0.6	100.0 **see below	5.5	84.0
Potential Emission in tons/yr	0.25	0.25	0.02	3.29	0.18	2.76

*PM emission factor is filterable and condensable PM combined. PM10 emission factor is filterable and condensable PM10 combined.
**Emission Factors for NOx: Uncontrolled = 100, Low NOx Burner = 50, Low NOx Burners/Flue gas recirculation = 32

Methodology

All emission factors are based on normal firing.
MMBtu = 1,000,000 Btu
MMCF = 1,000,000 Cubic Feet of Gas

Potential Throughput (MMCF) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1 MMCF/1,000 MMBtu
Emission Factors are from AP 42, Chapter 1.4, Tables 1.4-1, 1.4-2, 1.4-3, SCC #1-02-006-02, 1-01-006-02, 1-03-006-02, and 1-03-006-03 (SUPPLEMENT D 3/98)
Emission (tons/yr) = Throughput (MMCF/yr) x Emission Factor (lb/MMCF)/2,000 lb/ton
Note: Check the applicable rules and test methods for PM and PM10 when using the above emission factors to confirm that the correct factor is used (i.e., condensable included/not included).
See page 2 for HAPs emissions calculations.

Appendix A: Emissions Calculations
Natural Gas Combustion Only
MM BTU/HR <100
Small Industrial Boiler
HAPs Emissions

Company Name: **Woods Equipment Company**
Address City IN Zip: **Brownsburg, IN 46112**
CP: **063-14089-00040**
Plt ID: **00040**
Reviewer: ERG/AB
Date: 03/30/01

HAPs - Organics

	Benzene	Dichlorobenzene	Formaldehyde	Hexane	Toluene
Emission Factor in lb/MMcf	2.1E-03	1.2E-03	7.5E-02	1.8E+00	3.4E-03
Potential Emission in tons/yr	6.899E-05	3.942E-05	2.464E-03	5.913E-02	1.117E-04

HAPs - Metals

	Lead	Cadmium	Chromium	Manganese	Nickel
Emission Factor in lb/MMcf	5.0E-04	1.1E-03	1.4E-03	3.8E-04	2.1E-03
Potential Emission in tons/yr	1.643E-05	3.614E-05	4.599E-05	1.248E-05	6.899E-05

Methodology is the same as page 1.

The five highest organic and metal HAPs emission factors are provided above.

Additional HAPs emission factors are available in AP-42, Chapter 1.4.

Appendix A: Emissions Calculations
VOC and Particulate
From Surface Coating Operations

Company Name: **Woods Equipment Company**
Address City IN Zip: **Brownsburg, IN 46112**
CP: **063-14089-00040**
Plt ID: **00040**
Reviewer: ERG/AB
Date: 03/30/01

Material	Density (Lb/Gal)	Weight % Volatile (H20 & Organics)	Weight % Water	Weight % Organics	Volume % Water	Volume % Non-Volatiles (solids)	Gal of Mat. (gal/unit)	Maximum (unit/hour)	Pounds VOC per gallon of coating less water	Pounds VOC per gallon of coating	Potential VOC pounds per hour	Potential VOC pounds per day	Potential VOC tons per year	Particulate Potential (ton/yr)	lb VOC/gal solids	Transfer Efficiency
Primer AAA0747	11.8	28.80%	0.0%	28.8%	0.0%	52.72%	0.13000	4.167	3.39	3.39	1.84	44.07	8.04	9.94	6.43	50%
Paint AAA0526	10.7	32.37%	0.0%	32.4%	0.0%	50.77%	0.13000	4.167	3.46	3.46	1.87	44.95	8.20	8.57	6.81	50%
Potential Emissions											**3.71**	**89.02**	**16.25**	**18.51**		

METHODOLOGY

Pounds of VOC per Gallon Coating less Water = (Density (lb/gal) * Weight % Organics) / (1-Volume % water)
Pounds of VOC per Gallon Coating = (Density (lb/gal) * Weight % Organics)
Potential VOC Pounds per Hour = Pounds of VOC per Gallon coating (lb/gal) * Gal of Material (gal/unit) * Maximum (units/hr)
Potential VOC Pounds per Day = Pounds of VOC per Gallon coating (lb/gal) * Gal of Material (gal/unit) * Maximum (units/hr) * (24 hr/day)
Potential VOC Tons per Year = Pounds of VOC per Gallon coating (lb/gal) * Gal of Material (gal/unit) * Maximum (units/hr) * (8760 hr/yr) * (1 ton/2000 lbs)
Particulate Potential Tons per Year = (units/hour) * (gal/unit) * (lbs/gal) * (1- Weight % Volatiles) * (1-Transfer efficiency) *(8760 hrs/yr) *(1 ton/2000 lbs)
Pounds VOC per Gallon of Solids = (Density (lbs/gal) * Weight % organics) / (Volume % solids)
Total = Worst Coating + Sum of all solvents used

Appendix A: Emissions Calculations
Welding and Thermal Cutting

Company Name: **Woods Equipment Company**
Address City IN Zip: **Brownsburg, IN 46112**
CP: **063-14089-00040**
Plt ID: **00040**
Reviewer: ERG/AB
Date: 03/30/01

PROCESS	Number of Stations	Max. electrode consumption per station (lbs/hr)		EMISSION FACTORS* (lb pollutant/lb electrode)				EMISSIONS (lbs/hr)				HAPS (lbs/hr)
WELDING				PM = PM10	Mn	Ni	Cr	PM = PM10	Mn	Ni	Cr	
Submerged Arc	0	0		0.036	0.011			0.000	0.000	0.000	0	0.000
Metal Inert Gas (MIG)(ER5154)	24	1.5		0.0241	0.000034		0.00001	0.868	0.001	0.000	0.00036	0.0016
Stick (E7018 electrode)	0	0		0.0211	0.0009			0.000	0.000	0.000	0	0.000
Tungsten Inert Gas (TIG)(carbon steel)	0	0		0.0055	0.0005			0.000	0.000	0.000	0	0.000
Oxyacetylene(carbon steel)	0			0.0055	0.0005			0.000	0.000	0.000	0	0.000

	Number of Stations	Max. Metal Thickness Cut (in.)	Max. Metal Cutting Rate (in./minute)	EMISSION FACTORS (lb pollutant/1,000 inches cut, 1" thick)**				EMISSIONS (lbs/hr)				HAPS (lbs/hr)
FLAME CUTTING				PM = PM10	Mn	Ni	Cr	PM = PM10	Mn	Ni	Cr	
Oxyacetylene	0	0	0	0.1622	0.0005	0.0001	0.0003	0.000	0.000	0.000	0.000	0.000
Oxymethane	0	0	0	0.0815	0.0002		0.0002	0.000	0.000	0.000	0.000	0.000
Plasma**	4	0.5	80	0.0039				0.075	0.000	0.000	0.000	0.000
EMISSION TOTALS												
Potential Emissions lbs/hr								0.94	0.001	0.000	0.000	0.002
Potential Emissions lbs/day								22.62	0.029	0.000	0.009	0.038
Potential Emissions tons/year								4.13	0.005	0.000	0.002	0.007

METHODOLOGY

*Emission Factors are default values for carbon steel unless a specific electrode type is noted in the Process column.

**Emission Factor for plasma cutting from American Welding Society (AWS). Trials reported for wet cutting of 8 mm thick mild steel with 3.5 m/min cutting speed (at 0.2 g/min emitted). Therefore, the emission factor for plasma cutting is for 8 mm thick rather than 1 inch, and the maximum metal thickness is not used in calculating the emissions.

Using AWS average values: (0.25 g/min)/(3.6 m/min) x (0.0022 lb/g)/(39.37 in./m) x (1,000 in.) = 0.0039 lb/1,000 in. cut, 8 mm thick

Plasma cutting emissions, lb/hr: (# of stations)(max. cutting rate, in./min.)(60 min./hr.)(emission factor, lb. pollutant/1,000 in. cut, 8 mm thick)

Cutting emissions, lb/hr: (# of stations)(max. metal thickness, in.)(max. cutting rate, in./min.)(60 min./hr.)(emission factor, lb. pollutant/1,000 in. cut, 1" thick)

Welding emissions, lb/hr: (# of stations)(max. lbs of electrode used/hr/station)(emission factor, lb. pollutant/lb. of electrode used)

Emissions, lbs/day = emissions, lbs/hr x 24 hrs/day

Emissions, tons/yr = emissions, lb/hr x 8,760 hrs/year x 1 ton/2,000 lbs.

Welding and other flame cutting emission factors are from an internal training session document.

Refer to AP-42, Chapter 12.19 for additional emission factors for welding.

Appendix A: Emission Calculations
HAP Emission Calculations
From Surface Coating
Company Name: Woods Equipment Company
Address City IN Zip: Brownsburg, IN 46112
CP#: 063-14089-00040
Plt ID: 00040
Permit Reviewer: ERG/AB
Date: 03/30/01

Material	Density (Lb/Gal)	Gallons of Material (gal/unit)	Maximum (unit/hour)	Weight % Ethyl Benzene	Weight % Xylenes	Weight % Toluene	Ethyl Benzene Emissions (ton/yr)	Xylene Emissions (ton/yr)	Toluene Emissions (ton/yr)
Primer - AAA0747	11.77	0.130000	4.17	0.00%	0.00%	0.00%	0.000	0.000	0.000
Paint - AAA0526	10.68	0.130000	4.17	2.20%	11.00%	3.60%	0.557	2.787	0.912
Total Potential Emissions							**0.557**	**2.787**	**0.912**

METHODOLOGY

HAPS emission rate (tons/yr) = Density (lb/gal) * Gal of Material (gal/unit) * Maximum (unit/hr) * Weight % HAP * 8760 hrs/yr * 1 ton/2000 lbs

Appendix A: Emission Calculations
PM/PM-10 Emissions
from Powder Coating Operations
Company Name: Woods Equipment Company
Address City IN Zip: Brownsburg, IN 46112
CP#: 063-14089-00040
Plt ID: 00040
Permit Reviewer: ERG/AB
Date: 03/30/01

Operation	Maximum Production (units/day)	Part Area (sq.ft/unit)	Powder Coat Usage (sq.ft/lb of Powder)	Transfer Efficiency (%)	PM/PM-10 Emissions (lbs/day)	PM/PM-10 Emissions (tons/year)
Powder Coating Booth	100	7.00	64.00	40.00%	6.56	1.20

METHODOLOGY

PM/PM-10 emission rate (lbs/day) = Average Part Area (sq.ft) * Max. Throughput (units/day) * (1 - Transfer Efficiency) * (1 / Powder Usage Rate (sq.ft/lb))
PM/PM-10 emission rate (tons/yr) = PM/PM-10 Emission rate (lbs/day) * 365 days/year * (1ton/2000 lbs)